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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,240	02/08/2001	Valery Kanevsky	10004226-1	6661

AGILENT TECHNOLOGIES  
Legal Department, 51U-PD  
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EXAMINER  
MORAN, MARJORIE A

ART UNIT	PAPER NUMBER
1631	5

DATE MAILED: 10/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/779,240

Applicant(s)

KANEVSKY ET AL.

Examiner

Marjorie A. Moran

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 15-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 February 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### ***Election/Restrictions***

Applicant's election of Group I, claims 1-14 in Paper No. 4, filed 7/22/03 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 15-34 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 4.

An action on the merits of elected claims 1-14 follows.

### ***Information Disclosure Statement***

The IDS filed 7/9/01 as paper #2 has been considered in full.

### ***Specification***

The abstract of the disclosure is objected to because the first "sentence" is a fragment. Appropriate correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed method steps appear to be steps

of manipulating data, equivalent to mental processes. Applicant is reminded that mental processes are not statutory subject matter under 35 USC 101.

The specification teaches that the claimed method may be a computer-implemented one; however, steps of manipulating data, whether such steps are performed by a computer or "by hand" are not statutory where they do not provide a result which is useful, tangible, and concrete. As set forth in MPEP 2106.IV.B:

"In practical terms, claims define nonstatutory processes if they:

- consist solely of mathematical operations without some **claimed practical application** (i.e., executing a "mathematical algorithm"); or

- simply manipulate abstract ideas, e.g., a bid (Schrader, 22 F.3d at 293-94, 30

USPQ2d at 1458-59) or a bubble hierarchy (Warmerdam, 33 F.3d at 1360, 31

USPQ2d at 1759), without some claimed practical application."

Emphasis added by examiner.

As set forth in MPEP 2106.IV.B.2(b) (ii):

"A claim is limited to a practical application when the method, as claimed, produces a concrete, tangible and useful result; i.e., the method recites a step or act of producing something that is concrete, tangible and useful. See AT &T, 172 F.3d at 1358, 50 USPQ2d at 1452. Likewise, a machine claim is statutory when the machine, as claimed, produces a concrete, tangible and useful result (as in State Street, 149 F.3d at 1373, 47 USPQ2d at 1601) and/or when a specific machine is being claimed (as in Alappat, 33 F.3d at 1544, 31 USPQ2d at 1557 (in banc). For example, a computer process that simply calculates a mathematical algorithm that models noise is nonstatutory.

The claims do not recite any particular result, therefore the instant claims do not recite any practical application. It is possible that the "uses" recited in claims 4-6 may be considered "applications" for the claimed method. However, as neither a network (for reconstruction) or a cluster is defined by the claims, one skilled in the art would not be apprised of either the use or practicality of the result, therefore the recited "uses" do not appear to be a useful, tangible and concrete result of the method steps nor a practical application of the method in toto.

Claims 1-14 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility.

The specification discloses on page 3 that the inventive method may be used for pattern recognition, and on page 4 that the method may be used for classification of experiments. It is noted the claims do not recite any steps of pattern recognition nor classification. The claims do not recite features from any particular data set such that comparison or classification would provide a useful result. For example, comparison of features related to a drug candidate (pattern recognition between three-dimensional shapes or classification based PK parameters) wherein similarity values are output may be a useful result. As one skilled in the art would not know what to do with a random predictor set, the step of "achieving" a predictor set, as recited in claim 2, is not considered a useful result.

Claims 4-5 recite that predictor sets may be compared to determine pathways for use in network recognition. Claim 6 recites "use" of a predictor set for determining clusters. However, in the absence of any direction with regard to a particular network or specific data for clustering, these "uses" are merely an invitation to do further

research. Applicant is reminded that a "use" to perform further research is not a utility under 35 USC 101.

As the claimed method maybe performed with any data set, and the "uses" set forth are applicable to any kind of data, the method claimed does not have a specific, substantial and credible utility. See MPEP 2107 for definitions of specific, substantial and credible under 35 USC 101.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites a method of determining a predictor set of features in the preamble, then recites a list of method steps, none of which is a "determining" step. A "determining" step may be interpreted to be a calculation or selection step. However, the step of "selecting" is the first step of the claim and therefore does not appear to be a "determining" step. As the claim does not recite any step of actually determining anything, and there is no step which may be interpreted to be a "determining" step, it is unclear what method applicant actually intends, and the claim is indefinite.

Claim 2 recites a step which appears to be nonsensical. As no predictor set of features is "determined" or "achieved", it is unclear what the antecedent basis for "the same predictor set of features" is intended to be. Further, it is unclear what is meant by "achieving" a set of features "as many times" as a number of features. As the examiner can not interpret any meaning for this claim, claim 2 is deemed unsearchable and will not be further treated on its merits. Applicant is advised that claims dependent on 3 (i.e. claims 4-7) do not correct the indefiniteness of claim 2 and are also deemed unsearchable.

Claim 3 recites that a defined value "determines" a threshold level. A "defined value" is generally regarded in the art to be a constant or variable number, but is not generally regarded to be an equation or algorithm, or a program or method step. An equation, algorithm or step may "determine" a threshold level, but a constant or variable number is a static entity and therefore can not be said to "determine" anything. If applicant intends that the "defined value" be used to determine a threshold value, then it is noted that the method step for "using" the value is not recited in the claims. It is unclear whether applicant intends a method step or a limitation of his defined value, therefore the claim is indefinite. As a step of "using" is not generally considered a definite method step, applicant is encouraged to recite a positive, active method reflecting the intended "use". If applicant intends the defined value to "be" or "define" a threshold level, then the examiner recommends rewriting the claim to make the relationship between the defined value and a threshold level clear. Applicant is reminded that any amendment to the claims must be fully supported and enabled by the

originally filed disclosure. The examiner recommends pointing to specific support in the specification, by page and line number, for support for any amendment.

Claims 4-6 recite that a predictor set of features, or a predictor set, "may be" compared or used. Claims 4 and 6 also recite that associated pathways "may be" used in network reconstruction. Use of the phrase "may be" renders the claims indefinite as it is unclear whether applicant intends the limitation(s) following the phrase to be positive method steps. This rejection may be overcome by replacing "may be" with --is-- or --are--, where appropriate, in each claim.

Claims 4 and 5 recite the terms "associated" and "non-associated", in various lines. The terms are not defined in the claims or by the specification. Neither the claims nor specification recite or disclose any parameters for determining an "association" between predictor sets or pathways such that one skilled in the art would know what an "associated" or a "non-associated" predictor set or pathway is intended to be. As one skilled in the art would know the metes and bounds intended by applicant for an "associated" predictor set or pathway, or for a "non-associated" predictor set, the claims are indefinite.

Claim 6 recite that a predictor set may be "used" in determining clusters. No actual method step or limitation of a predictor set is recited in claim 6. As it is unclear what limitation of the method of claim 2 applicant intends, the claim is indefinite.

Claim 7 recites that a removed feature is "the first feature defined" in a predictor set. Claim 11 recites that a removed feature is "the earliest feature defined" in a predictor set. There is no step of "defining" a feature or features in the method of claim



1, therefore it is unclear what applicant intends to be "the first feature defined" or the "earliest feature defined" in the predictor set.

Claim 12 recites "the predictor set and target" in line 1. There is antecedent basis for "the predictor set" but not for "the target" in the claims. As it is unclear what applicant intends "the target" to be, claim 12 is indefinite.

Claim 14 limits the checking step of claim 1 to be performed by a "separate" algorithm. It is noted that parent claim 1 does not recite an algorithm, therefore it is unclear what the algorithm of claim 14 is intended to be "separate" from. As it is unclear what limitation applicant intends by a "separate algorithm", the claim is indefinite.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 8-9, and 11-14 are rejected under 35 U.S.C. 102(a) as being anticipated by PUDIL et al (IDS ref: Proc. Int. Conf. Pattern Recog. (2000) vol. 2, pp. 406-409).

PUDIL teaches a method of iteratively adding and subtracting complements/features to and from a predictor set in order to obtain an "optimal" set ; i.e. one wherein all desired features are "repeated" (p. 407), thus anticipating claim 1. PUDIL teaches that a checking algorithm stops when a user-specified limit (threshold) is exceeded (p. 407), thus anticipating claims 3 and 14. PUDIL teaches that an initial set of features may be chosen by random selection (p. 407, left column), thereby anticipating claim 9. PUDIL teaches that a set may be formed by removing one feature to form a new set (step 2 of the Oscillating Search Algorithm, p. 407), thereby inherently teaching a selected predictor set of k-1 features, and thus anticipating claim 8. As the first step of PUDIL's algorithm is removal of a feature, that feature is inherently the first or "earliest" one "defined" in the predictor set, and claim 11 is anticipated. PUDIL exemplifies use of his algorithm in high-dimensional space (Figure 3) comprising feature sets of multiple features, thereby anticipating claims 12-13.

Claims 1, 3, 8 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by PUDIL et al. (IDS ref: Pattern Recog. Lett. (1994), vol. 15, pp. 1119-1125).

PUDIL teaches a method of iteratively adding and subtracting features from a predictor set wherein the set is evaluated for meeting particular criteria in each iteration (p. 1121-1122), thereby anticipating claim 1. PUDIL teaches that a feature must meet an individual significance level (threshold) to be added to the predictor set (p. 1121, Section 2.1), thus anticipating claim 3. PUDIL teaches that his selected predictor set

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may be set to k-1 (p. 1122), and teaches a variety of algorithms for "checking" if particular criteria are met (p. 1122), thus anticipating claims 8 and 14. PUDIL exemplifies his method in M-dimensional space (p. 1123, Figure 1) wherein the predictor set comprises multiple features, thereby anticipating claims 12-13.

### ***Conclusion***

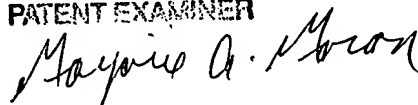
No claims are allowed; the abstract is objected to.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marjorie A. Moran whose telephone number is (703) 305-2363. The examiner can normally be reached on Monday to Friday, 7:30 am to 4 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on (703) 308-4028. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3524.

**MARJORIE MORAN**  
**PATENT EXAMINER**



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